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ABSTRACT

The story of blacks in chemistry is one of determination, expectation, participation and contribution. Between 1910 and 1945, despite George Washington Carver's significant agricultural contributions and St. Elmo Brady's scholarship, white graduate schools and industry had little interest in accepting blacks. There was slow progress, despite these attitudes, by black scholars in black schools and a foundation was laid for future research and publications. Beginning with World War II, changing social conditions provided more chances for scientific growth in universities, industry, textbook writing, government agencies, and professional organizations. The effects of desegregation began to be felt in universities and black scholars were hired away from exclusively black colleges. By the mid-1960s, black scholars were less hampered by prejudice and several black chemists became leaders in industry, administration and university programs. Presently, black schools face financial and identity crises because they have lost many of their black teachers. In order for blacks to continue to progress in chemistry, black scholars must serve at black schools, participate in professional organizations, and must write and publish. High level education must be provided for black students. (Author/KR)

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FROM CARVER TO HILL, AND ON[1]

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THE STORY OF BLACKS IN CHEMISTRY IS AN EVER-CONTINUING SAGA OF DETERMINATION, EXPECTATION, PARTICIPATION AND CONTRIBUTION. THIS SAGA MAY BE PRESENTED IN SEVERAL WAYS. THE AUTHOR PROPOSES TO DIVIDE THE SAGA INTO FOUR ERAS OF TIME: ERA 1 BEGINNING WITH THE WORK OF CARVER CA 1910 TO THE WORLD WAR II ERA, CA 1945; ERA 2, THE POST WORLD WAR II DAYS, CA 1945 TO THE HUMAN RIGHTS STRUGGLE DAYS, CA 1965; ERA 3, THE TIME FROM 1966 - PRESENT; AND ERA 4, THE FUTURE 1978 --. EACH OF THESE ERAS HAS A CERTAIN CHARACTERISTIC WHICH ADDS COLOR TO THE SAGA.

ERA 1 (1910 - 1946)

THE STORY OF BLACKS IN CHEMISTRY MAY WELL BE SAID TO BEGIN WITH TWO MEN--GEORGE WASHINGTON CARVER AND ST. ELMO BRADY. IT IS TRUE THAT CHEMISTRY, AS A SUBJECT, APPEARED IN SOME OF THE CATALOGS OF THE BLACK SCHOOLS ESTABLISHED AFTER THE CIVIL WAR. THE SCHOOLS WERE OFTEN CALLED UNIVERSITIES IN ANTICIPATION BY THEIR FOUNDERS, EVEN THOUGH OFTEN THEY WERE NOT GOOD HIGH SCHOOLS. IT IS ALSO TRUE THAT THERE WERE PIONEER TEACHERS LIKE THOMAS W. TALLEY OF FISK UNIVERSITY. SOME OF THE EARLY INVENTIONS AND

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[1]SOME OF THE INFORMATION REPORTED IN THIS PAPER WAS OBTAINED WITH A GRANT FROM THE RESEARCH CORPORATION, NEW YORK CITY, WHO ALSO GAVE THE AUTHOR HIS FIRST GRANT FOR SCIENTIFIC RESEARCH. ACKNOWLEDGMENT OF THE SUPPORT IS GRATEFULLY MADE.

DISCOVERIES CREDITED TO SLAVES AND BLACK FREEDMEN, SUCH AS THE DEVELOPMENT OF ICE CREAM BY AUGUSTUS JACKSON AND THE REFINING OF SUGAR BY NORBERT RILLEAUX, INVOLVED CHEMICAL STUDIES AND CHEMICAL ACTIVITIES. HOWEVER, IT WAS NOT UNTIL CARVER AND BRADY, WHO INCIDENTALLY WORKED TOGETHER AT TUSKEGEE INSTITUTE FROM 1910-12, MADE THEIR CONTRIBUTIONS IN THE LATE TEENS THAT CHEMISTRY AS A DISCIPLINE INVOLVED BLACKS.

THE STORY OF CARVER, THE GREAT AGRICULTURAL SCIENTIST, THE PEANUT AND SWEET POTATO WIZARD, HAS BEEN TOLD OFTEN AND NEED NOT BE REPEATED HERE. CERTAINLY THE PRESENT OCCUPANT OF THE WHITE HOUSE OWES MUCH TO CARVER'S PIONEERING STUDIES. CARVER WAS THE FIRST PERSON OF COLOR TO MAKE A SIGNIFICANT SCIENTIFIC IMPACT. ON THE OTHER HAND, BRADY, INSPIRED BY TALLEY AS A STUDENT AND LATER BY CARVER AND BOOKER T. WASHINGTON, AS COLLEAGUES, WAS THE FIRST BLACK SCHOLAR TO RECEIVE A DOCTORATE IN CHEMISTRY. THIS DEGREE WAS AWARDED BRADY BY THE UNIVERSITY OF ILLINOIS IN 1916. BRADY OFTEN DESCRIBED WITH INTEREST, THE STORY OF HIS GRADUATE WORK, BEGINNING IN 1912 WITH 20 WHITES AND ONE OTHER AND ENDING IN 1916 WITH SIX WHITES AND ONE OTHER.

IN THIS ERA, THE ONLY SIGNIFICANT OPPORTUNITY FOR BLACK SCHOLARSHIP AND BLACK PARTICIPATION IN CHEMICAL ACTIVITIES WAS AT BLACK SCHOOLS. IT IS INTERESTING THAT MANY OF THE SO-CALLED LIBERAL NORTHERN SCHOOLS WOULD NOT HIRE THEIR DISTINGUISHED GRADUATES. FOR INSTANCE, AS LATE AS 1936, DEPAUW UNIVERSITY IN INDIANA COULD NOT HIRE PERCY JULIAN AS A PROFESSOR, EVEN THOUGH

IT USED HIS SERVICES AS A LAB ASSISTANT. JULIAN HAD A DOCTORATE.

AMHERST COLLEGE IN MASSACHUSETTS COULD NOT USE ITS PHI BETA KAPPA GRADUATE, R. PERCY BARNES, LATER APPOINTED TO THE ORIGINAL NATIONAL SCIENCE FOUNDATION BOARD, OR ITS GREAT ATHLETE, CHARLES R. DREW OF BLOOD BANK FAME. UNDAUNTED, THESE SCHOLARS WENT TO HOWARD UNIVERSITY AND LED PRODUCTIVE CAREERS.

THE WHITE GRADUATE SCHOOLS WERE NOTABLY RELUCTANT IN ACCEPTING BLACKS AS GRADUATE STUDENTS. JULIAN OFTEN DESCRIBED HIS DIFFICULTIES AT HARVARD UNIVERSITY AND SUBSEQUENTLY WENT TO EUROPE WHERE HE RECEIVED HIS DOCTORATE AT VIENNA UNDER SPATH. IT WAS NOT UNTIL THE THIRTIES THAT A BLACK GRADUATED FROM AN UNIVERSITY WEST OF THE MISSISSIPPI WHEN THE PIONEERING HENRY GILMAN AT IOWA STATE DIRECTED N. O. CALLOWAY TO A DOCTORATE IN 1933. IN A STORY TOLD IN <u>READERS DIGEST</u>, EDWARD L. HARRIS HAD TO WORK AS A JANITOR TO EARN FUNDS TO OBTAIN HIS DOCTORATE FROM PITTSBURGH. MANY OTHER SCHOLARS OF THAT TIME COULD DESCRIBE SIMILAR DIFFICULTIES.

HIRING BLACKS ON THE FACULTY OF THESE GRADUATE SCHOOLS WAS UNTHINKABLE; EVEN GRADUATE TEACHING ASSISTANTSHIPS WERE NOT AVAILABLE.

LIKEWISE, INDUSTRY HAD LITTLE INTEREST IN BLACKS. THUS, THE ACHIEVEMENTS OF LLOYD HALL AT GRIFFITH LABORATORIES IN CHICAGO, WHERE HE BECAME THE FIRST BLACK RESEARCH DIRECTOR, WERE ESPECIALLY NOTEWORTHY. BY AND LARGE, THERE WAS "NO ROOM AT THE INN" OF CHEMICAL INDUSTRY FOR BLACKS. THE LIBERAL EASTMAN KODAK COMPANY

HIRED ITS FIRST BLACK WITH JAMES LUVALLE IN THE FORTIES. (THE AUTHOR HAD THE DISCOURAGING EXPERIENCE OF HAVING THE DRUG COMPANY WHICH FINANCED HIS GRADUATE EDUCATION REFUSING TO HIRE HIM.)

HIRING IN GOVERNMENT LABORATORIES WAS LIMITED OR NON-EXISTENT.

AT THE SAME TIME, THE BLACK SCHOOLS HAD LIMITED FUNDS, FACILITIES AND EQUIPMENT. GRANTS WERE PRACTICALLY NON-EXISTENT. BRADY PLANNED THE CHEMISTRY BUILDING AT HOWARD UNIVERSITY. BRADY MOVED TO FISK, WHERE HE SECURED FUNDS FOR THE FIRST BUILDING DEVOTED ENTIRELY TO CHEMISTRY AT A BLACK SCHOOL, NOW APPROPRIATELY NAMED THE TALLEY-BRADY BUILDING. BRADY ALSO DEVELOPED A SMALL GRADUATE PROGRAM AND BROUGHT OUTSTANDING SCHOLARS LIKE GILMAN, ROGER ADAMS AND LOUIS FIESER TO EXAMINE GRADUATE STUDENTS AND TO PARTICIPATE IN THE TALLEY LECTURE SERIES. LATER JULIAN AND BARNES AT HOWARD AND HUGGINS AT ATLANTA DEVELOPED SMALL (M.A.) PROGRAMS. IT WAS NOT UNTIL THE SIXTIES THAT A BLACK SCHOOL (HOWARD) WOULD AWARD THE PH. D. DEGREE IN CHEMISTRY, AND EVEN IN THE SEVENTIES, ATLANTA UNIVERSITY HAS BEGUN ONLY A D. A. PROGRAM.

THESE CONDITIONS LED CHARLES DREW, IN A MEMORABLE PAPER[2], TO BEMOAN THE FACT THAT IN 1939, WHEN A GROUP OF 42 BLACKS WERE SELECTED FOR THE HALL OF FAME, ONLY FOUR SCIENTISTS (BANNEKER, CARVER, JUST, DANIEL WILLAMS) WERE SELECTED AND ONLY CARVER WAS A CHEMIST. EVEN AS LATE AS THE FORTIES, CONTRIBUTIONS AND PUBLICATIONS WERE LIMITED.

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[2]C. R. DREW, J. NEGRO HISTORY, 35, 135 (1950)

Limited opportunities led to the establishment of the National Institute of Science, where black scholars could present papers. Likewise, Carver devoted his savings to the establishment of the Carver Institute at Tuskegee Institute, where black scholars could carry out chemical research.

And yet in spite of difficulties, frustration, and hardships, there was steady progress. Certainly Barnes at Howard developed a successful program on α-diketones. Brady at Fisk and Huggins at Atlanta, among others, were publishing a significant, even though small, number of papers. A foundation was being laid.

ERA II (1946-1966)

World War II, despite its many tragedies, provided new opportunities for black chemists. The great need for scientific manpower forced schools, industry and government agencies to accept black scientists. These institutions found, to their surprise, that given the opportunity blacks could achieve. Thus, from the Chicago atomic energy groups and the University of Chicago came William J. Knox, Clyde R. Dillard, Moddie Taylor and Henry McBay among others. Berkeley produced Lloyd Ferguson, Cornell University gave us Carl Hill, Lincoln Diuguid and William J. Wallace. From Iowa State in Ames came Sam Massie, Louis Cason and Horace Melvin. Cal Tech produced James LuValle and Iowa Rufus Perry. Many other examples could be listed.

THESE MEN THEN WENT TO BLACK SCHOOLS WHICH AS A RESULT OF CHANGING SOCIAL CONDITIONS, PROVIDED MORE OPPORTUNITIES FOR SCIENTIFIC GROWTH. CARL HILL LED ONE OF THE MORE PROLIFIC GROUPS AT TENNESSEE STATE INCLUDING CLYDE DILLARD, MARY HILL, RUBYE PRIGMORE, ALFRED SPRIGGS AND JAMES LOWE. LLOYD FERGUSON, MODDIE TAYLOR, KELSO MORRIS, VICTOR TULANE, PERCY BARNES AND OTHERS DEVELOPED AN ACTIVE PROGRAM AT HOWARD. CLARENCE MASON, JOINED BY LOUIS CASON AND OTHERS, LED THE CARVER FOUNDATION TO GREAT HEIGHTS, WHILE NELSON BAKER OF VIRGINIA STATE, AND GEORGE LEWIS VAN DYKE - ALA. STATE SPALDING AND CYRIL ATKINS AT MORGAN WERE DEVELOPING INTERESTING PROGRAMS. MASSIE AND RUFUS PERRY MADE IMPACTS AT LANGSTON UNIVERSITY IN OKLAHOMA. TWO NEW SCHOOLS, TEXAS SOUTHERN IN HOUSTON UNDER LLOYD WOODS AND RAY WILSON AND CENTRAL STATE IN OHIO, WITH OSCAR WOOLFOLK, DEVELOPED INTERESTING UNDERGRADUATE PROGRAMS. HENRY MCBAY AT MOREHOUSE, BEGAN DEVELOPMENT OF GENERATIONS OF BLACK SCHOLARS SUCH AS DOLPHUS MILLIGAN. ALL OVER THE NATION THERE WAS ACTIVITY. ADJUNCT TO THE NATIONAL INSTITUTE OF SCIENCE, BETA KAPPA CHI SCIENTIFIC SOCIETY WAS ESTABLISHED SO THAT THE ACHIEVEMENTS OF BLACK SCHOLARS COULD BE RECOGNIZED.

AT THE SAME TIME, INDUSTRY DISCOVERED BLACKS. MENTION HAS BEEN MADE OF EASTMAN AND JIM LUVALLE. EASTMAN ALSO HIRED BILL KNOX, SAM DENT, AND SAM MASSIE. BELL TELEPHONE LABS PROMOTED W. LINCOLN HAWKINS, GLIDDEN PAINT COMPANY DISCOVERED THE SIGNIFICANCE OF PERCY JULIAN WHILE DEWEY-ALMY ADVANCED HENRY HILL, WHO LATER ESTABLISHED HIS OWN COMPANY. LLOYD COOKE, FROM WISCONSIN AND MCGILL, JOINED VISKING AND CORN PRODUCTS ON HIS

WAY TO A VICE PRESIDENCY OF UNION CARBIDE.

EVEN GOVERNMENT AGENCIES BEGAN TO RECOGNIZE THE ACHIEVEMENTS OF BLACKS. JOHN HODGE AT THE NORTHERN REGIONAL LABORATORIES IN PEORIA WAS SOON RECOGNIZED AS ONE OF THE OUTSTANDING CARBOHYDRATE CHEMISTS WHILE ALBERT STEWART REACHED GREAT HEIGHTS AT OAK RIDGE. SAM MASSIE IN 1960 BECAME ASSOCIATE PROGRAM DIRECTOR AT THE NATIONAL SCIENCE FOUNDATION.

BLACK AUTHORS BEGAN TO WRITE. IT IS INTERESTING TO NOTE THAT WHILE TROOPS WERE PREVENTING THE PHYSICAL BLACK PRESENCE AT THE UNIVERSITY OF MISSISSIPPI, THE TEXTBOOK USED IN THEIR GRADUATE COURSE IN ORGANIC CHEMISTRY WAS WRITTEN BY A BLACK AUTHOR, LLOYD FERGUSON. FERGUSON ALSO WROTE A WIDELY ACCEPTED UNDERGRADUATE ORGANIC TEXT, KELSO MORRIS PRODUCED A FRESHMAN BOOK, AND MODDIE TAYLOR WROTE A FRESHMAN TEXTBOOK OF NOTE. MASSIE AND LLOYD FERGUSON AUTHORED SIGNIFICANT CHEMICAL REVIEW ARTICLES AS HAD N. O. CALLOWAY IN 1945.

BLACKS BEGIN TO PARTICIPATE IN PROFESSIONAL ORGANIZATIONS. THE AUTHOR WAS ELECTED PRESIDENT OF THE OKLAHOMA ACADEMY OF SCIENCE IN 1955 WHILE LLOYD COOKE WAS ELECTED IN THE EARLY SIXTIES TO THE ACS BOARD OF DIRECTORS. (COOKE LATER BECAME THE FIRST BLACK CANDIDATE FOR PRESIDENT OF THE AMERICAN CHEMICAL SOCIETY AND A MEMBER OF THE NATIONAL SCIENCE BOARD).

PERCY JULIAN, HENRY HILL AND LINCOLN DUIGUID, AMONG OTHERS, FOUNDED THEIR OWN COMPANIES.

RECOGNITION, IN FORM OF THE MCA AWARD, GIVEN FOR EXCELLENCE IN COLLEGE CHEMISTRY TEACHING WENT TO THREE: MODDIE TAYLOR, CARL HILL, AND SAM MASSIE.

Even the large graduate institutions were beginning to recognize the abilities of blacks--first as visiting professors, then as permanent professors. Morgan lost Clyde Dillard to Brooklyn University and Howard lost Lloyd Ferguson to California State College at Los Angeles, among others.

But as these conditions produced the growth of departments in black schools, they sowed the seeds of their difficulties. In addition to the loss to white schools, these men were found to be able administrators. West Virginia State College selected William J. Wallace as President, Johnson C. Smith chose Rufus Perry, Kentucky State, Carl Hill, Bennett College, Issac Miller and North Carolina College selected Massie - among others.

The effects of school desegregation were beginning to be felt. No longer did black schools have a monopoly on good black students. Black Faculty no longer had to teach at black schools - and they didn't. Blacks no longer had to read their papers at N.I.S. meetings - and they didn't. Another era was beginning.

ERA III (1967-1978)

With the Civil Rights struggle and EEOC, it now became "the thing" to hire at least one black. Opportunities became available in unusual places.

Thus black scholars no longer limited, began to reach unusual heights. Bill Guillory became chairman of the department at the University of Utah, while Clyde Dillard became Associate

DEAN AT BROOKLYN COLLEGE. SAM VON WINBUSH WAS APPOINTED A PROFESSOR AT SUNY IN OLD WESTBURY, CHARLES PORTER AND WADE KORNEGAY JOINED THE STAFF OF MIT AND LLOYD FERGUSON BECAME CHAIRMAN OF THE DEPARTMENT AT CALIFORNIA STATE AT LOS ANGELES.

YOUNG BLACKS ENTERED INDUSTRY IN UNPRECEDENTED NUMBERS. THUS EXXON BOASTED OF A PHILIP MERCHANT, SHELL, ROY JACKSON, DUPONT DELBERT GLOVER. BAXTER TILFORD, A MASSIE STUDENT AT LANGSTON BECAME HEAD OF A PRODUCTION UNIT FOR MONSANTO. WILLARD JOHNSON ROSE TO DIRECTOR OF RESEARCH AT PHILIP MORRIS, AND RONALD BROOKS WAS EMPLOYED BY GENERAL ELECTRIC AND BILL BAZELLE BECAME A CHIEF CHEMIST AT DUPONT IN ORANGE, TEXAS. THESE ARE JUST EXAMPLES OF SOME OF THE BRIGHT YOUNG MEN AND WOMEN ENTERING INDUSTRY.

IN 1972, SAM MASSIE BECAME CHAIRMAN OF THE DIVISION OF CHEMICAL EDUCATION. DOLPHUS MILLIGAN AUTHORED OVER 83 PAPERS AT NBS AND ELSEWHERE BEFORE HIS UNTIMELY DEATH.

NO LONGER IS JOHN HODGE ALONE AT NORTHERN REGIONAL RESEARCH LABORATORIES, MARIANNE BOHANNON WORKS THERE.

ON THE GOVERNMENT SCENE, LEWIS GIST SERVES AS HEAD OF ALL SCIENCE MANPOWER DEVELOPMENT ACTIVITIES AT NSF, WHILE GERALD EDWARDS HEAD A MAJOR PROBLEM, THOMAS MALONE IS A DEPUTY DIRECTOR OF NIH AND PRINCE RIVERS, FORMERLY AT FISK, HEADS A SECTION AT N.I.H.

NEWER SCHOLARS WERE ARISING AT BLACK SCHOOLS AMONG THEM - TOM COLE AT ATLANTA, CLYDE SMITH AT SUNU, JOE MORRIS AND BILL JACKSON AT HOWARD, JIM PERKINS AT JACKSON STATE, BERNARD JOHNSON

AND SHELBERT SMITH AT CENTRAL STATE, CURTIS MCDONALD AND BOBBY LEE WILSON AT TEXAS SOUTHERN , JESSE JONES AT BISHOP COLLEGE IN TEXAS AND JIM SAYLES AT BENNETT.

CHEMISTS CONTINUE TO ADVANCE TO ADMINISTRATION, NOTABLY JOSEPH GAYLES TO THE PRESIDENCY OF TALLADEGA; CHARLES MEREDITH, ACTING CHANCELLOR, ATLANTA CENTER; FRED HUMPHRIES, PRESIDENT TENNESSEE STATE UNIVERSITY; VANDON WHITE, DEAN, SCHOOL OF HEALTH SCIENCE, FLORIDA INTERNATIONAL UNIVERSITY.

WOMEN CHEMISTS HAVE BEGUN TO RISE, FOR EXAMPLE, GLORIA ANDERSON IS HEAD OF THE DEPARTMENT AT MORRIS BROWN, EMMA D. HILL BECAME THE FIRST BLACK PH. D. FROM TEXAS A. M. UNIVERSITY WHILE MILDRED SMALLEY RECEIVED HER PH. D. IN INORGANIC CHEMISTRY FROM LSU.

IN THE TEXTBOOK AREA, LLOYD FERGUSON AUTHORED A MAJOR SERIES ON ALICYCLIC COMPOUNDS, WHILE BILL GUILLORY PUBLISHED A MAJOR TEXT ON SPECTROSCOPY.

MENTION SHOULD BE MADE OF TWO RELATED ACTIVITIES. ONE OF THESE IS THE XAVIER - MBS SYMPOSIUM, HELD IN THE SPRING AT XAVIER FOR THE PAST FOUR YEARS UNDER DR. JOYCE CARRINGTON. THIS SYMPOSIUM HAS SERVED AS A VEHICLE FOR MANY UNDERGRADUATES TO READ PAPERS. ANOTHER PROGRAM WAS THE SUMMER PRE HEALTH SCIENCE PROGRAM AT FISK, UNDER THE DIRECTION OF PRINCE RIVERS. EVEN THOUGH THESE PROGRAMS WERE DIRECTED PRIMARILY TOWARD FUTURE HEALTH SCIENTISTS, THEY REPRESENTED TWO OF THE GREAT OPPORTUNITIES FOR THE DEVELOPMENT OF YOUNG BLACKS IN CHEMISTRY.

A NEW ORGANIZATION, THE NATIONAL ORGANIZATION OF PROFESSIONAL BLACK CHEMISTS AND CHEMICAL ENGINEERS, UNDER THE LEADERSHIP OF

OF BILL GUILLORY HAS BEEN ESTABLISHED AND HAS HAD THREE SUCCESSFUL ANNUAL MEETINGS.

PERHAPS 1977 SAW THE CULMINATION OF BLACK ACHIEVEMENT AS HENRY HILL SERVED AS PRESIDENT OF THE AMERICAN CHEMICAL SOCIETY, AND LLOYD FERGUSON WHO HAD ALSO RECEIVED THE MCA AWARD WAS NAMED THE OUTSTANDING CHEMICAL EDUCATOR.

BUT THERE WAS ONE VERY DISTURBING FEATURE. THERE WERE FEW BLACK TEACHERS AT BLACK SCHOOLS. IN THE LAST THREE YEARS, THE AUTHOR HAS VISITED OVER A DOZEN BLACK SCHOOLS AND FOUND LESS THAN AN AVERAGE OF ONE BLACK TEACHER PER SCHOOL. WHERE ARE THE ROLE MODELS?

AS WE REACH THE END OF AN ERA OF GREAT PERSONAL ACHIEVEMENT, THE WORDS OF MARTIN LUTHER KING, JR., FACE US - "WHERE DO WE GO FROM HERE?"

ERA IV - THE FUTURE - 1978 -

FROM THAT MEMORABLE CHILDHOOD TALE, ALICE IN WONDERLAND, IT MAY BE RECALLED THAT ALICE AND HER MENTOR, THE RABBIT, CAME TO A CROSSROADS. ALICE WAS PUZZLED, AND ASKED THE RABBIT, "WHICH ROAD SHALL I TAKE?" THE RABBIT ASKED HER, "WHERE DO YOU WANT TO GO?" ALICE REPLIED, "I REALLY DON'T KNOW." THE RABBIT SAID, "THEN, IT REALLY DOESN'T MATTER."

LIKE ALICE, BLACKS ARE AT THE CROSSROADS. WHILE INDIVIDUAL OPPORTUNITIES ARE AT THEIR GREATEST PEAKS, GROUP OPPORTUNITIES ARE IN CRISIS. BLACK SCHOOLS, WHICH STILL MUST EDUCATE MOST BLACK STUDENTS, FACE FINANCIAL AND IDENTITY CRISES. THE

SHORTAGE OF BLACK TEACHERS HAS ALREADY BEEN MENTIONED. NOT ENOUGH BLACK STUDENTS PARTICIPATE IN SCIENCE FAIRS. TOO FEW BLACK HOMES HAVE SCIENTIFIC CONVERSATIONS. BLACK SECONDARY TEACHERS ARE NO LONGER PRESENT TO INSPIRE BLACK STUDENTS TO CONTINUE. THE PERCENTAGE OF BLACKS IN GRADUATE SCHOOLS IS DECREASING. GRANT ORGANIZATIONS LIKE THE PETROLEUM RESEARCH FUND OF THE ACS, RECEIVE FEW APPLICATIONS AND THUS MAKE FEW GRANTS TO BLACK SCHOLARS.

IF I SOUND DISCOURAGED, I AM NOT. I'M VERY HOPEFUL. LAST MONTH THE MORGAN CHAPTER OF THE ACS STUDENT AFFILIATE WAS NAMED ONE OF THE 37 BEST CHAPTERS. BUT AS WE REJOICE IN OUR ACHIEVEMENTS IN TRAVELING FROM CARVER TO HILL, AND ON, WE MUST NOT FORGET - IN THE WORDS OF ROBERT FROST, "THERE ARE MILES AND MILES TO GO, BEFORE WE SLEEP." I WISH TO PROPOSE THE FOLLOWING ACTIONS:

(1) ACHIEVEMENTS OF BLACKS MUST RECEIVE EVEN GREATER PUBLICITY. PROGRAMS LIKE THIS AND OTHERS SHOULD BE GIVEN WIDESPREAD COVERAGE. BLACKS, WHITES, AND OTHERS MUST BE MADE AWARE THAT BLACKS, TOO, ARE PART OF THE MAINSTREAM. PROGRAMS LIKE THE DREYFUSS VISITING LECTURE SERIES, SPONSORED BY THE UNCF AND OTHERS, WHICH BRING BLACK SCHOLARS TO BLACK CAMPUSES AND COMMUNITIES MUST BE CONTINUED AND INCREASED.

(2) BLACK SCHOLARS MUST SERVE AT BLACK SCHOOLS, AND THESE SCHOOLS MUST PROVIDE OPPORTUNITIES FOR BLACK SCHOLARS TO GROW.

(3) BLACKS MUST PARTICIPATE IN EVEN GREATER NUMBERS IN PROFESSIONAL ORGANIZATIONS. IMPORTANT DECISIONS ARE MADE IN

HIGH PLACES BY SMALL GROUPS, AND IF WE AREN'T THERE, WE MISS OUT.

(4) BLACKS MUST INSIST IN OUR TOWNS AND COMMUNITIES ON HIGH-LEVEL EDUCATION FOR BLACK STUDENTS. IN THE WORDS OF DEMOCRITUS, "MEN HAVE OFTEN SAID THAT ONLY FREE MEN SHOULD BE EDUCATED, BUT GOD HAS SAID, ONLY EDUCATED MEN SHALL BE FREE." BLACKS MUST PARTICIPATE IN PTA; AND BOARDS OF EDUCATION, AND INSIST THAT BLACK ELEMENTARY STUDENTS RECEIVE THE MATHEMATICAL AND LANGUAGE SKILLS NEEDED TO COMPETE IN THE WORLD OF TOMORROW AND TODAY.

(5) BLACKS MUST WRITE AND PUBLISH. THE WRITTEN WORD IS ONE OF THE BEST WAYS OF MAKING THE BLACK PRESENCE FELT.

AND, FINALLY, WE MUST NOT DESPAIR. I'M REMINDED OF THE WORDS OF LANGSTON HUGHES, MOTHER TO SON -

WELL, SON, I'LL TELL YOU:
LIFE FOR ME AIN'T BEEN NO CRYSTAL STAIR.
IT'S HAD TACKS IN IT,
AND SPLINTERS,
AND BOARDS TORN UP,
AND PLACES WITH NO CARPET ON THE FLOOR-
BARE.
BUT ALL THE TIME
I'SE BEEN A-CLIMBIN' ON,
AND REACHIN' LANDIN'S,
AND TURNIN' CORNERS,
AND SOMETIMES GOIN' IN THE DARK
WHERE THERE AIN'T BEEN NO LIGHT.
SO BOY, DON'T YOU TURN BACK.

DON'T YOU SET DOWN ON THE STEPS
'CAUSE YOU FINDS IT'S KINDER HARD.
DON'T YOU FALL NOW-
FOR I'SE STILL GOIN', HONEY,
I'SE STILL CLIMBIN',
AND LIFE FOR ME AIN'T BEEN NO CRYSTAL STAIR.

FINALLY, IN A TALK LIKE THIS, MANY OUTSTANDING CHEMISTS COULD NOT BE MENTIONED. IF I OMITTED YOUR FAVORITE CHEMIST, I APOLIGIZE, I'D LIKE TO CLOSE WITH THE NAVAL WORDS OF ELLA WHEELER WILCOX

SHIPS SAIL EAST AND SHIPS SAIL WEST
WHILE THE SELF SAME BREEZES BLOW
IT'S THE SET OF THE SAIL, AND NOT THE GALE
WHICH DETERMINE THE WAY THEY GO.

IT IS IN OUR HANDS AS TO WHERE WE GO AS WE TRAVEL FROM CARVER TO HILL AND ON.